

<b>ALASKA PIONEER HOME</b>		<b>P&amp;P No: 08.08</b>
<b>Title: Clostridium difficile (C diff)</b>		<b>Approval: D. COTE</b>
<b>Key Words: Incidence, Properties, Treatment, Contact Precautions, Prognosis</b>		
<b>Team: Nursing, Housekeeping</b>	<b>Effective Date: 8/1/12</b>	<b>Page: 1 of 6</b>

## PURPOSE

To give information and explain practices to prevent the transmission of C diff (Clostridium difficile) infection in the Alaska Pioneer Homes (AKPH).

## POLICY

The AKPH nursing staff cares for and treats residents with a C diff infection, and prevents the transmission of the infection to other residents, staff, and the environment.

C diff infection is not a barrier to continued residence in the AKPH.

Contact Precautions are used to care for AKPH residents with C diff. Staff uses appropriate barrier precautions to prevent skin and mucous membrane exposure.

AKPH housekeeping uses a disinfectant with bleach on the rooms, surfaces, and equipment in the surroundings of the resident who has a C diff infection.

## DEFINITIONS

**Clostridium difficile (C diff)** are spore forming bacteria that cause severe diarrhea when competing bacteria are wiped out in the gut flora with antibiotics.

## PROCEDURE

### I. Incidence of C diff Infection

#### A. Prevalence of C diff

1. C diff bacteria are found throughout the environment in soil, air, water, and human and animal feces.
2. Illness from C diff most commonly affects older adults in hospitals or long term care and assisted living facilities.
3. In recent years, C diff infections have become more frequent, more severe, and more difficult to treat.
4. Each year in the United States, tens of thousands of people become sick from C diff infection.

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**B. Risk factors for acquiring C diff**

1. Are now taking or have recently taken antibiotics.
  - a. The risk goes up if broad spectrum antibiotics are taken that target a wide range of bacteria, use multiple antibiotics, or take antibiotics for a prolonged period.
  - b. When an antibiotic is taken, the drug destroys helpful bacteria as well as the bacteria causing the illness.
  - c. Without the helpful bacteria, the C diff quickly grows out of control.
2. Are 65 years or older.
  - a. The risk of becoming infected with C diff is 10 times greater for people 65 years and older.
3. Are now or have recently been hospitalized, especially for an extended period.
4. Live in a long term care or assisted living facility where germs spread easily.
5. Have a serious underlying illness or weak immune system as a result of a medical condition or treatment.
6. Have had abdominal surgery or a gastrointestinal procedure.
7. Have a colon disease such as inflammatory bowel disease or colorectal cancer.
8. Have had a previous C diff infection.

**II. Properties of C diff Infection**

- A. Signs and symptoms can range from asymptomatic to severe inflammation of the colon, especially among the elderly.
1. New onset of C diff infection.
    - a. Diarrhea of more than 3 partially formed or watery stools per 24 hours.
  2. Mild to moderate C diff infection.
    - a. Watery diarrhea 3+ times a day for 2+ days.
    - b. Mild abdominal cramping and tenderness.
  3. Severe C diff infection causes the colon to become inflamed (colitis) or to form patches of raw tissue that can bleed or produce pus.
    - a. Watery diarrhea 10-15 times a day.
    - b. Abdominal cramping and pain, which may be severe.
    - c. Fever, up to 105°F or 40.5°C.
    - d. Blood or pus in the stool.
      - 1) When the C diff is established in the colon, it produces toxins that attack the lining of the colon and destroy cells.
    - e. Nausea.
    - f. Dehydration.
    - g. Loss of appetite.
    - h. Weight loss.

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1. Dehydration from severe diarrhea.
2. Kidney failure from dehydration.
3. Large bowel perforation from extensive damage to the lining of the intestine.
  - a. A perforated bowel can spill bacteria from the intestine into the abdominal cavity, leading to a life-threatening peritoneal infection.
4. Toxic megacolon from distension of the colon when it is unable to expel gas and stool.
5. Death can occur from mild to moderate C diff infection if not treated promptly.

**C. Transmission**

1. C diff is shed in feces, and any surface, item, or medical device that becomes contaminated with feces can act as a source for the spores and the transmission of infection.
2. C diff is transmitted from person to person by the fecal→oral route.
  - a. C diff bacteria are passed in feces and spread to food, surfaces, and objects when people who are infected do not wash their hands thoroughly.
  - b. C diff is spread on hands from person to person, on cart handles, bedrails, bedside tables, toilets, sinks, stethoscopes, thermometers, and telephone and remote controls.
  - c. C diff spores can exist for five months on hard surfaces.
3. The heat resistant C diff spores are hardy and are not killed by alcohol hand cleansers or routine cleaning of surfaces.
  - a. Disinfectants containing bleach are *effective* in killing C diff.
  - b. Commonly used disinfectants, such as quaternary ammoniums and phenolics, are *ineffective* against C diff.
4. Spores of the bacteria can remain viable outside the human body for weeks or months.
  - a. Residents in the Home may accidentally ingest the spores.
  - b. When spores are ingested, they pass through the stomach intact due to their acid resistance.
5. Extremely rigorous infection control protocol is required to decrease or eliminate the risk of ingestion.

**D. Precautions to take with C diff**

1. Place the resident in a private room or room with a resident with the same infection, if possible.
2. Contact Precautions to reduce the risk of transmission of C diff spores by direct and indirect contact.

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- a. *Direct* contact transmission involves skin to skin contact and physical transfer of spores to a susceptible host from an infected person, either caregiver to resident or resident to resident.
- b. *Indirect* contact transmission is contact of a susceptible host with a contaminated object.
- 3. Effective Contact Precaution measures:
  - a. Wear gloves at all times while in the resident's room.
  - b. Wear gloves whenever touching the resident or anything the resident has touched, such as rail, table, sink, or doorknob.
  - c. Do not touch clean surfaces with contaminated gloves.
  - d. Wash hands immediately after removing gloves and before leaving room.
  - e. Wash hands with soap and water to eliminate the spores.
  - f. Do not touch potentially contaminated surfaces or items with bare hands.
  - g. Wear a gown when entering the room if your clothing may come in contact with the resident, surfaces or items in the room, or if the resident is incontinent, has diarrhea, or wound drainage not contained by a dressing.
  - h. Remove gown without touching the outside and place it in the proper container before leaving the room.
  - i. Use a paper towel to touch the doorknob when exiting the room.
  - j. All surfaces are carefully disinfected with a product that contains chlorine bleach to kill the C diff spores.
  - k. Assure that shared equipment is disinfected between residents using a bleach solution.
  - l. Continue precautions for two (2) days after diarrhea stops.
  - m. Avoid unnecessary use of antibiotics.
  - n. Potted plants containing soil can be a reservoir for the C diff bacteria.
    - 1) Plants with soil should be avoided in direct resident care areas.
- 4. Laundry
  - a. Although soiled linen may contain C diff, the risk of disease transmission from soiled linen is negligible.
  - b. Common sense hygiene practices for processing clothing and linen are recommended.
  - c. Soiled linen is handled as little as possible with minimal agitation to prevent contamination of the air and persons handling the linen.
  - d. Soiled linen is bagged or placed in a container where it is used and is not sorted or rinsed in that location.
  - e. Linen that is heavily contaminated with blood, body fluid, or body excrement is bagged to prevent leakage during transport for laundering.
  - f. Laundry is washed on the regular cycle using hot water (160°) and a hot dryer.

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- g. Water temperature may be decreased if a bleach solution is added to the wash, to assure that C diff bacteria are destroyed.
- 5. Trash disposal
  - a. All trash, including the soiled disposable briefs of a resident infected with C diff, goes into regular trash.

### **III. Treatment of C diff Infection**

- A. Medical treatment
  - 1. The first step in treating C diff is to stop taking the antibiotic that triggered the infection.
    - a. Mild illness from C diff may improve if the antibiotic is stopped, but severe symptoms require treatment with a different antibiotic.
  - 2. Physician often begins treatment based on clinical signs before definitive results are available, to reduce complications.
    - a. Residents are treated when C diff colitis is diagnosed, to avoid sepsis or bowel perforation.
  - 3. Physician may order stool test to detect toxins produced by C diff bacteria.
  - 4. Metronidazole (Flagyl) is the drug of choice, due to the efficacy and lower price.
  - 5. Oral vancomycin (125 mg four times daily) is second line therapy.
    - a. Second line therapy is given when initial treatment does not work.
  - 6. Probiotics are organisms, such as bacteria and yeast, which help restore a healthy balance to the intestinal tract.
  - 7. Surgery to remove the diseased portion of the colon may be the only option for people with severe pain, organ failure, or inflammation of the lining of the abdominal wall.
- B. Caring for residents with C diff.
  - 1. Follow infection control measures listed above.
  - 2. Encourage resident to wash hands after toileting.
  - 3. Many people have loose stools during or shortly after antibiotic therapy.
  - 4. If symptoms last more than 3 days or if there is a new fever, severe pain or cramping, blood in the stool, or more than 3 bowel movements in a day, contact the physician.
  - 5. Supportive treatment for diarrhea includes:
    - a. Plenty of fluids containing water, salt, sugar, such as diluted fruit juice, and broth.
    - b. If there is watery diarrhea, provide nutrition with starchy foods, such as potatoes, noodles, rice, wheat, and oatmeal.

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- c. After diarrhea clears up, there may be temporary difficulty digesting milk and milk products.

**C. Prognosis**

1. People who have had C diff become sick again because the initial infection never went away or the person is re-infected with a different strain of the bacteria.
2. After a first treatment with metronidazole or vancomycin, C diff recurs in 20% of people.
3. C diff recurs in 40-60% with subsequent occurrences.

<b>HISTORY OF REVISIONS</b>
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New: 6/8/12  
Revised: 7/20/12  
Reviewed:

<b>ATTACHMENTS</b>
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<b>REFERENCES</b>
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